COUNTY OF LOS ANGELES
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February 8, 2016

TO: Each Supervisor

FROM: Cynthia A. Harding, M.P.H.

Daryl L. Osby

SUBJECT: **ALISO CANYON STORAGE FACILITY GAS LEAK WEEKLY UPDATE**

On January 19, 2016, the Department of Public Health (DPH) and the Fire Department (LACoFD) submitted a memorandum on the natural gas leak at the Aliso Canyon Storage Facility and informed your Board that weekly updates would be provided on an ongoing basis. This is to provide the fourth written update from DPH and LACoFD, which is contained in Attachments 1 and 2.

Attachment 1 provides a summary and tables of the data collected under the Expanded Air Monitoring Plan. To date, methane levels remain well under the lower explosive limit and benzene levels remain below both the short-term and chronic exposure limits. Sulfur odorant levels remain detectable by the human nose, with continuing reports of short-term health effects in some individuals. This information is provided to the public in a report available on the DPH website, accessible at: http://www.publichealth.lacounty.gov/media/gasleak/.

Attachment 2 provides an update from LACoFD on progress made under Unified Command, which was activated on January 22, 2016. Highlights include hosting meetings with local, state, and federal cooperating/assisting agencies to review technical and operational updates and holding an elected officials' conference call in partnership with DPH and the Office of Emergency Management to provide necessary status updates. Furthermore, additional staffing has been provided to offer operational support to stop the leak.

DPH and LACoFD continue to work closely together to ensure a coordinated and unified County response to the natural gas leak. The next weekly written update will be provided on February 16, 2016.

If you have any questions or need additional information, please let us know.

CAH
DLO

Attachments

c: Chief Executive Officer
County Counsel
Executive Officer, Board of Supervisors

Los Angeles County Department of Public Health
Porter Ranch Expanded Air Monitoring Effort
Weekly Update of February 8, 2016

Background

The Los Angeles County Department of Public Health (DPH) is conducting an Expanded Air Monitoring Plan to comprehensively evaluate air quality in the Porter Ranch area. This Plan is an ongoing effort of DPH, supported by multiple agencies engaged in air monitoring and data collection, including Los Angeles County Fire Department (LACFD), Southern California Gas (SCG), South Coast Air Quality Management District (AQMD), Los Angeles Unified School District (LAUSD), and California Air Resources Board (CARB).

Attached Tables 1-5 show the most recent week's data and cumulative air quality monitoring results for two types of samples being collected from three areas: Within the community, within the facility, and along the facility property line adjacent to the community.

10-Minute Grab Samples: Samples are currently taken daily from 11 locations within the Porter Ranch community and historically from 9 locations within the facility. Note that the 9 locations within the facility have been changed to focus sampling efforts on 12-hour integrated samples both within the community and the facility. Grab samples provide a snapshot of the chemical concentrations and more easily identify peak levels.

12-Hour Integrated Samples: Samples are taken twice daily from six locations along the community/facility fence-line. They are collected from three locations within the facility (as of 1/12) and from three locations within the community (as of 1/29). This type of sample provides a complete picture of possible residential exposures to average chemical concentrations over the entire day.

Summary of Air Monitoring Results: Results are largely unchanged from those previously reported on 2/2.

Methane: Health protective levels for methane are based on the flammability limit. The most recent week (1/26-1/31) of methane results for grab samples collected in the community ranged from 2.2 parts per million (ppm) to 21 ppm. Methane detected in 12-hour samples along the community/facility fence-line ranged from 2 ppm to 24 ppm. Methane levels have been below the lower explosive limit of 50,000 ppm, and are not expected to cause any health effects.

Benzene: The most recent week (1/26 – 1/31) of benzene results for grab samples collected in the community ranged from 0.1 ppb to 0.4 ppb, which are below the Office of Environmental Health Hazard Assessment (OEHHA) acute short-term (1-hour) exposure limit of 8 ppb. All grab sample measurements in the community to date have been below the OEHHA acute exposure limit of 8 ppb, and less than 1% of benzene levels measured within the facility perimeter have exceeded this limit. Benzene detected in the most recent 12-hour samples along the community/facility fence-line ranged from 0.1 to 0.4, which is below the OEHHA chronic exposure limit of 1 ppb and within the range of background benzene for the Los Angeles Air Basin.

Sulfur Odorants: Throughout the community, air concentrations of sulfur odorants remain below the concentration able to be detected by instruments. However, sulfur odors detectable by the human nose remain throughout the community, with continuing reports of short-term health effects in some individuals. Reported symptoms include fatigue, nausea, dizziness, headaches, and eye/nose/throat irritation. There are no data to suggest long-term health risks at this exposure level.

Future Activities and Outlook

SCG projects that the leaking well (SS-25) will be sealed early in February, ending the nearly four month uncontrolled release of natural gas into the surrounding environment. Once SCG determines that the well is

sealed and the emission of natural gas has stopped, the State Division of Gas and Geothermal Resources (DOGGR) will review conditions to confirm that the well has in fact been successfully plugged and rendered permanently out of service. Confirmation by DOGGR that the flow of gases from well SS-25 has ceased represents a major milestone and essential first step in restoring conditions in the community.

In the days immediately following well closure, DPH expects to see further reductions in the levels of methane measured daily as part of the Expanded Air Monitoring Plan. Reductions in methane concentrations should be accompanied by similar reductions in the associated chemicals of concern, including those contributing to the persistent odors. Air monitoring will continue for some time into the future to determine whether the chemicals of concern remain below the levels of significance.

Attachments

Table 1 Daily Community Peak Concentrations for the Week (January 18 – 25)
Table 2 Summary of Community Peak Concentrations to Date (October – January 24)
Table 3 Summary of Facility Peak Concentrations (October 30 – January 24)
Table 4 Summary of 12-Hour Monitoring Within the Facility (January 12 – January 27)
Table 5 Summary of 12-Hour Monitoring Along Community/Facility Fence-line (January 12 – January 24)

Table 1. Daily Community Peak Concentrations for the Week (January 26 – January 31)

Chemical*	Mon. 1/26	Tues. 1/27	Wed. 1/28	Thurs. 1/29	Fri. 1/30	Sat. 1/31	Units
Methane	27	23	34	22	5.3	2.2	ppm
Benzene	0.2	0.4	0.4	0.1	0.3	0.1	ppb
t-Butyl Mercaptan	ND	ND	ND	ND	ND	ND	ppb
Tetrahydrothiophene	ND	ND	ND	ND	ND	ND	ppb

ppm = parts per million; ppb = parts per billion; ND = non-detect

*Other volatile chemicals, hydrocarbons and sulfur compounds are being tested and will be reported in this table if detected above background levels.

Table 2. Summary of Community Peak Concentrations to Date (October 30 – January 28)

Chemical*	Number Detected / Total Samples	% Detects	Community Range (Min – Max)	Average**	Units
Methane	1702 / 170	100%	1.2 - 231	8.0	ppm
Benzene	766 / 1699	45%	0.1 - 5.6	0.38	ppb
t-Butyl Mercaptan	0 / 1524	0%	ND	ND	ppb
Tetrahydrothiophene	0 / 1524	0%	ND	ND	ppb

ppm = parts per million; ppb = parts per billion; ND = non-detect

*Other volatile chemicals, hydrocarbons and sulfur compounds are being tested and will be reported in this table if detected above background levels.

**Average of detected concentrations.

Table 3. Summary of Facility Peak Concentrations (October 30 – January 11)

Chemical*	Number Detected / Total Samples	% Detects	Aliso Canyon Facility Range (Min-Max)	Average**	Units
Methane	1080 / 1080	100%	1.3 - 4340	60	ppm
Benzene	363 / 1079	34%	0.1 - 31	1.3	ppb
t-Butyl Mercaptan	0 / 1116	0%	ND	ND	ppb
Tetrahydrothiophene	0 / 1116	0%	ND	ND	ppb

ppm = parts per million; ppb = parts per billion; ND = non-detect

*Other volatile chemicals, hydrocarbons and sulfur compounds are being tested and will be reported in this table if detected above background levels.

**Average of detected concentrations.

Note: Feb. 2 update reported more samples, because they included results from 12-hour testing conducted at 3 facility locations that began on January 11. These 12-hour facility samples are shown in Table 4 below.

Table 4. Summary of 12-Hour Monitoring Within Facility (January 12 – January 27)

Chemical*	Number Detected / Total Samples	% Detects	Aliso Canyon Facility Range	Los Angeles County Background Range	Units
Methane	96 / 96	100%	2.6 - 720	1.8 - 2.1**	ppm
Benzene	96 / 96	100%	0.08 - 8.4	0.1 - 1.8†	ppb
t-Butyl Mercaptan	0 / 96	0%	ND	NA	ppb
Tetrahydrothiophene	0 / 96	0%	ND	NA	ppb

ppm = parts per million; ppb = parts per billion; ND = non-detect

*Other volatile chemicals, hydrocarbons and sulfur compounds are being tested and will be reported in this table if detected above background levels.

**Hsu YK et al. 2010. Methane emissions inventory verification in southern California. Atmospheric Environment, 44:1-7.

†MATES IV Study (South Coast Air Quality Management District) – range of 24-hour sample results for benzene across Los Angeles Air Basin.

Table 5. Summary of 12-Hour Monitoring Along Community/Facility Fence-line (January 12 – January 27)

Chemical*	Number Detected / Total Samples	% Detects	Aliso Canyon Facility Range	Los Angeles County Background Range	Units
Methane	196 / 196	100%	2 - 24	1.8 - 2.1**	ppm
Benzene	197 / 197	100%	0.1 - 0.4	0.1 - 1.8†	ppb
t-Butyl Mercaptan	0 / 197	0%	ND	NA	ppb
Tetrahydrothiophene	0 / 197	0%	ND	NA	ppb

ppm = parts per million; ppb = parts per billion; ND = non-detect

*Other volatile chemicals, hydrocarbons and sulfur compounds are being tested and will be reported in this table if detected above background levels.

**Hsu YK et al. 2010. Methane emissions inventory verification in southern California. Atmospheric Environment, 44:1-7.

†MATES IV Study (South Coast Air Quality Management District) – range of 24-hour sample results for benzene across Los Angeles Air Basin.

COUNTY OF LOS ANGELES

FIRE DEPARTMENT

1320 NORTH EASTERN AVENUE
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DARYL L. OSBY
FIRE CHIEF
FORESTER & FIRE WARDEN

February 8, 2016

TO: EACH SUPERVISOR

FROM: DARYL L. OSBY, FIRE CHIEF

ALISO CANYON UNIFIED COMMAND GAS LEAK-UPDATE

The purpose of this communiqué is to provide your Honorable Board with an update on the Aliso Canyon gas leak. As a follow-up to the February 1, 2016, memo provided to your Board, please see the updates and summary of activities as provided below:

SUMMARY OF FIRE DEPARTMENT ACTIVITIES

- Unified Command has been operating since January 22, 2016, to manage the incident and to coordinate all involved agencies.

- One cooperating/assisting in-person agency meeting and one conference call was held to discuss and to review technical and operational updates. Attendees invited included local, State and federal cooperating and assisting agencies.

- Department of Public Health, Office of Emergency Management and this Department participated in an elected officials' conference call to bring them up to date.

- The operations to stop the leak have reached an important and critical juncture; this Department is bringing in additional resources as needed to support the 150 plus operations personnel working to stop the leak. We are informing the local residents that there is no need for alarm if they see these fire resources come and go on any given day.

- Unified PIOs are working closely to create consistent and coordinated community updates. Currently we are working on a communication plan to provide affected residents timely and accurate information for returning home after the leak has been stopped.

SUMMARY OF SOUTHERN CALIFORNIA GAS COMPANY ACTIVITIES

- Continues to host daily public conference calls.

- Cal-OSHA representatives continue to meet with incident management team staff to discuss and coordinate their access and activities.

- Well Kill Attempts — Relief well #1 is very close to intercept with the target well, SS-25. The goal is to drill through the SS-25 casing and stop the flow of gas with the heavy drilling fluid. After the flow is stopped, concrete will be pumped into the well to displace the drilling fluids. This is the critical point for DOGGR to validate the well kill. Following the completion of a root cause analysis, the permanent and complete well kill will be completed after other activities are performed.

- Relief Well Progress — The relief well site drilling is at 8,585 feet (measured depth). Casings have been installed and cemented. The well is in the storage area and close to intersecting with the leaking SS-25 well.

- A second relief well site has been prepared and equipment/drill rig is being moved and assembled onsite.

- Relocations — SoCal Gas has relocated 5,695 (4,520 last week) households out of the affected area in Porter Ranch. SoCal Gas has 983 (2,226 last week) relocations in process and 1,153 (1,157 last week) have been offered relocation, but still undecided.

- Air Purification — 4,800 (3,649 last week) air scrubber systems are in homes as well as 2,677 (1,675 last week) homes provided 7,000 plug in devices. A total of 4,816 (3,627 last week) homes have received weatherization.

- Different methods are being attempted to control the gas leak at well SS-25.

- Drilling relief well to intercept SS-25.

- Further withdrawal of gas at the facility to reduce overall storage volume in the reservoir has stopped.

- SS-25 remains off production and will not be placed in-service.

If you have any questions, please contact me at (323) 881-6180 or your staff may contact Chief Deputy David R. Richardson Jr., Emergency Operations at (323) 881-6178.

DLO:aat

c: Sachi Hamai
Mary Wickham
Jim Jones
Sheila Williams
Cynthia Harding
Jeffery Gunzenhauser
Jeff Reeb
Each Board Deputy